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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/599,993 | 06/23/2000 | Atsunobu Murase | 0102/0127 | 8979 |

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EXAMINER

BRINEY III, WALTER F

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2644

13

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/599,993

Applicant(s)

MURASE, ATSUNOBU

Examiner

Walter F Briney III

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 8-11, 15-19, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayanagi et al. (US Patent 5,732,390) in view of Genter (US Patent 5,157,653).

Claim 1 is limited to **an environmental noise level estimation apparatus**. Katayanagi discloses **detection means for detecting a level of a sound signal including a voice signal and an environmental noise signal** (figure 1, element 3 → R₀). The VSELP encoder of Katayanagi measures frame energy, frames are a collection of samples, therefore the frames inherently require **sampling means** that operate in **response to a clock signal**. Katayanagi discloses **estimation means** (figure 4, element 5a) **responsive to said clock signal** (because all operations are based on frame energies generated by the VSELP encoder), **for estimating, renewing, and outputting an estimated environmental noise level of said environmental noise signal** (column 9, line 61-column 10, line 7). Even though Katayanagi discloses the existence of a noise decision unit, the process used by the noise decision unit is not disclosed. Therefore, Katayanagi anticipates all limitations of the claim with the exception of **variation detection means**. Genter teaches a noise level estimation

process that includes a variation estimation process (figure 4). As seen in figure 4 EAVG (i.e. **a presently sampled level**) is compared to FAVG (i.e. **a previously sampled level**). Therefore, an increase is detected. When an increase occurs, the **estimation means**, as taught by Genter, **gradually varies said estimated environmental noise level** (figure 4, $NATT_{m+1}$) **from a previously estimated environmental noise level** (figure 4, element $NATT_n$). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the noise estimation and variation detection means as taught by Genter for the purpose of dynamically adjusting the noise level in the system of Katayanagi and because Katayanagi does not disclose the details of how such an operation is to be done.

Claim 9 is essentially the same as claim 1, as covered by Katayanagi in view of Genter, with the further limitation **wherein said first interval agrees with said second interval**. Katayanagi discloses performing all operations based on the current frame so the first interval based on the frame clock inherently matches with the second interval (i.e. agrees). Therefore, Katayanagi in view of Genter makes obvious all limitations of the claim.

Claim 2 is limited to **an environmental noise level estimation apparatus as claimed in claim 1**, as covered by Katayanagi in view of Genter. Genter teaches that **when said variation detection means detects that the presently sampled level** (figure 4, EAVG) **equals to** (since the YES path of the comparison between FAVG and EAVG uses a > operator the NO path includes all values \geq FAVG) **the previously sampled level** (figure 4, FAVG), **said estimation means keeps the estimated**

environmental noise level correspondent to the presently sampled level (figure 4, NO CHANGE). Therefore, Katayanagi in view of Genter makes obvious all limitations of the claim.

Claim 23 is limited to **an environmental noise level estimation apparatus as claimed in claim 1**, as covered by Katayanagi in view of Genter. Genter teaches **renewing the previous estimated environmental noise level** (figure 4, element $NATT_{m+1}$) **by adding a predetermined value thereto** (figure 4, element $CONST[C]$), **and outputs the renewed environmental noise as the estimated environmental noise level**. Therefore, Katayanagi in view of Genter makes obvious all limitations of the claim.

Claim 24 is essentially the same as claim 24 and is rejected for the same reasons.

Claim 3 is limited to **an environmental noise level estimation apparatus as claimed in claim 1**, as covered by Katayanagi in view of Genter, **wherein said detection means comprises power level detection means for detecting a power of said sound signal and output said detected power as said level**; Katayanagi discloses a VSELP encoder where the output R_o is a measurement of signal power (column 3, lines 52-62). Therefore, Katayanagi in view of Genter makes obvious all limitations of the claim.

Claim 4 is limited to **an environmental noise level estimation apparatus as claimed in claim 1**, as covered by Katayanagi in view of Genter, **further comprising comparing means for comparing said detected level with a predetermined value**;

Katayanagi discloses comparing the new input frame to a threshold (figure 2, elements S4 and S6). **Wherein said estimation means estimates said environmental noise level only when said detected level is smaller than said predetermined value;**

Katayanagi discloses marking the frame as not noise if the frame is greater than the threshold (figure 2, element S9 and column 8, lines 23-29) the noise is not updated in this case (column 9, line 61-column 10, line 7). Therefore, Katayanagi in view of Genter makes obvious all limitations of the claim.

Claim 8 is limited to **an environmental noise level estimation apparatus as claimed in claim 1**, as covered by Katayanagi in view of Genter, **further comprises voice presence detection means for detecting the presence of voice signal in accordance with an output of said detection means;** Katayanagi discloses marking a frame as voice based on frame parameters (column 3, lines 40-51 and column 9, lines 38-42). **Wherein said environmental noise level detection means stops said estimation means while said voice presence detection means detects the presence of voice signal;** Katayanagi discloses that the noise flag is set to 0 in the presence of voice and the noise level estimator is prevented from receiving new inputs and therefore it does not update (column 10, lines 1-22). Therefore, Katayanagi in view of Genter makes obvious all limitations of the claim.

Claim 10 is essentially the same as claim 1, as covered by Katayanagi in view of Genter. Therefore, Katayanagi in view of Genter has been shown to disclose all limitations of the claim with the exception of **a microphone for receiving sound and generating a sound signal including a voice signal and an environmental noise**

signal; Katayanagi discloses a microphone (figure 1, element 1) that is responsive to voice and noise. **Communication means for transmitting said voice signal in a radio wave signal and receiving another voice signal**; Katayanagi discloses an antenna (figure 1, element 1). **Reproducing means for reproducing said voice signal in accordance with said another voice signal**; Katayanagi discloses a speaker (figure 1, element 14). **Volume control means for controlling a volume of said reproduced voice signal in accordance with said estimated environmental noise level**; Katayanagi discloses a controller that generates volume levels based on the results of the noise level detection circuit (column 4, lines 56-60 and column 11, line 56-through column 12, line 46). Therefore, Katayanagi in view of Genter makes obvious all limitations of the claim.

Claim 11 is limited to **a communication apparatus as claimed in claim 10**, as covered by Katayanagi in view of Genter, with the further limitation of **codec means for coding voice signal at a predetermined interval to supply said coded voice signal to said communication means as said voice signal**. Katayanagi discloses a VSELP encoder for encoding voice, wherein the VSELP encoding uses frames (i.e. a **predetermined interval**) (column 4, line 61-column 5, line 12). **Decoding means for decoding said another voice signal at said predetermined interval to supply said decoded another voice signal to said reproducing means as said voice signal**; Katayanagi discloses a VSELP decoder that inherently operates at the same frame rate of the encoder to decode a received voice signal and output to a speaker (figure 1, elements 10 and 14 and column 5, lines 43-64). **Wherein said predetermined interval**

corresponds to an interval of said clock signal; Katayanagi discloses using frames (i.e. **said predetermined interval**), frames are defined as an interval of a clock signal. Therefore, Katayanagi in view of Genter makes obvious all limitations of the claim.

Claim 15 is essentially the same as claim 10 and is rejected for the same reasons.

Claims 16-19 are essentially the same as claims 1-4, respectively, and are rejected for the same reasons.

Claims 5-7, 12-14, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katayanagi in view of Genter in view of Gerson et al. (Acoustics, Speech, and Signal Processing, 1990. ICASSP-90., 1990 International Conference on , 3-6 April 1990 Page(s): 461 -464 vol.1.).

Claim 5 is limited to **an environmental noise level estimation apparatus as claimed in claim 1**, as covered by Katayanagi in view of Genter. Katayanagi discloses performing VSELP frame encoding/decoding, but does not disclose the clock interval. Therefore, Katayanagi in view of Genter has been shown to disclose all limitations of the claim with the exception of **an interval of said clock signal is smaller than 250 msec**. Gerson teaches that a VSELP processor uses a frame clock with a period of 20 msec (Gerson, page 461). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the VSELP processor of Katayanagi using a frame clock with a period of 20 msec as taught by Gerson for the purpose of providing a frame period that is necessary for VSELP encoding/decoding.

Claims 6 and 7 are rejected for the same reasons as claim 5.

Claims 12-14 are rejected for the same reasons as claim 5.

Claims 20-22 are essentially the same as claims 5-7 and are rejected for the same reasons.

Response to Arguments

Applicant's amendments, filed 5 February 2004, of claims 1, 2, 9, 10, 15, 16, and 17 have sufficiently overcome the previous 35 U.S.C. 112 second paragraph rejections, filed on 24 October 2003, with respect to claims 1-22. Therefore, the previous rejections are withdrawn

Applicant's arguments with respect to claims 1-22, filed 5 February 2004, have been considered but are moot in view of the new ground(s) of rejection.

In particular, the limitation of "**outputting an estimated environmental noise level,**" is a more narrow limitation than the original limitation of "**outputting an environmental noise level.**" It is noted that an estimated environmental noise level relates to a noise floor, or measurement of current background noise energy.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F Briney III whose telephone number is 703-305-0347. The examiner can normally be reached on M-F 8am - 4:30pm.

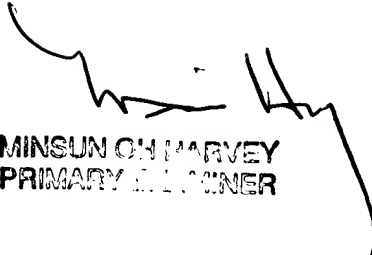
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 09/599,993
Art Unit: 2644

Page 10

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MINSUN OH HARVEY
PRIMARY INVENTOR